

**WHAT IS CLAIMED IS:**

1       1. A method of organizing a collection of objects, comprising:  
2       segmenting a sequence of objects into object clusters based on  
3       comparisons of successive object intervals to weighted measures of  
4       cluster extent, and  
5       comparisons of successive object intervals to weighted measures of  
6       cluster object density.

1       2. The method of claim 1, wherein measures of cluster extent  
2       correspond to spans of recorded generation times over which objects in the  
3       clusters respectively extend.

1       3. The method of claim 1, wherein measures of cluster extent  
2       correspond to spans of recorded generation locations over which objects in the  
3       clusters respectively extend.

1       4. The method of claim 1, wherein measures of cluster object density  
2       correspond to average measures of time intervals between successive objects in  
3       the clusters.

1       5. The method of claim 1, wherein measures of cluster object density  
2       correspond to averages of space intervals between successive objects in the  
3       clusters.

1       6. The method of claim 1, wherein segmenting the object sequence  
2       comprises merging consecutive objects into a given cluster until an interval  
3       between a candidate object and a preceding object in the given cluster exceeds a  
4       threshold computed based on a weighted measure of the extent of the given  
5       cluster, at which point a new cluster is initiated with the candidate object.

1       7. The method of claim 1, wherein segmenting the object sequence  
2       comprises merging consecutive objects into a given cluster until an interval  
3       between a candidate object and a preceding object in the given cluster exceeds a  
4       threshold computed based on a weighted measure of object density in the given  
5       cluster, at which point a new cluster is initiated with the candidate object.

1        8.     The method of claim 1, wherein weights applied to the measures of  
2 cluster extent decrease with increasing cluster size.

1        9.     The method of claim 1, wherein weights applied to the measures of  
2 cluster object density decrease with increasing cluster size.

1        10.    The method of claim 1, further comprising customizing at least one  
2 of the weights applied to the measures of cluster extent based on an analysis of  
3 objects in the cluster.

1        11.    The method of claim 10, wherein at least one weight is customized  
2 based on a fractal dimension estimate for context-related meta data associated  
3 with objects in the collection.

1        12.    The method of claim 1, further comprising customizing at least one  
2 of the weights applied to the measures of cluster object density based on an  
3 analysis of objects in the cluster.

1        13.    The method of claim 12, wherein at least one weight is customized  
2 based on a fractal dimension estimate for context-related meta data associated  
3 with objects in the collection.

1        14.    The method of claim 1, wherein segmenting the sequence of objects  
2 further comprises comparing object density of a given cluster including a  
3 candidate object with a weighted measure of object density for the given cluster  
4 without the candidate object.

1        15.    The method of claim 14, wherein measures of cluster object density  
2 correspond to averages of time intervals between successive objects in the  
3 clusters.

1        16.    The method of claim 14, wherein measures of cluster object density  
2 correspond to averages of space intervals between successive objects in the  
3 clusters.

1        17. The method of claim 14, wherein the measure of object density  
2 corresponds to a moving average density of objects.

1        18. The method of claim 14, wherein weights applied to the measures of  
2 cluster object density decrease with increasing cluster size.

1        19. The method of claim 1, wherein objects are segmented beginning at  
2 a first end of the object sequence.

1        20. The method of claim 19, wherein objects are further segmented  
2 beginning at a second end of the object sequence.

1        21. The method of claim 1, wherein the sequence to be segmented  
2 includes objects of the following types: text, audio, graphics, still images, video  
3 and business events.

1        22. A system of organizing a collection of objects, comprising:  
2            a segmentation engine operable to segment a sequence of objects into  
3            object clusters based on  
4                  comparisons of successive object intervals to weighted measures of  
5                  cluster extent, and  
6                  comparisons of successive object intervals to weighted measures of  
7                  cluster object density.

1        23. A method of organizing a collection of objects, comprising:  
2            segmenting objects from the collection into clusters;  
3            extracting context-related meta data associated with the objects and  
4            parsable into multiple levels of a name hierarchy; and  
5            assigning names to clusters based on the extracted context-related meta  
6            data corresponding to a level of the name hierarchy selected to distinguish  
7            segmented clusters from one another.

1        24. The method of claim 23, wherein names are assigned to clusters  
2 based on the extracted context-related meta data corresponding to a highest level  
3 of the name hierarchy that distinguishes clusters from each other.

1        25. The method of claim 23, wherein the context-related meta data  
2 corresponds to object generation times.

1        26. The method of claim 23, wherein the context-related meta data  
2 corresponds to object generation locations.

1        27. The method of claim 26, wherein the context-related meta data  
2 corresponds to recorded information relating to country, city, and state of object  
3 generation.

1        28. The method of claim 23, wherein the context-related meta data  
2 corresponds to both object generation times and object generation locations.

1        29. The method of claim 23, further comprising automatically naming  
2 objects in a given cluster based on the name assigned to the given cluster.

1        30. The method of claim 29, wherein the objects in the given cluster are  
2 named automatically in accordance with a chronological ordering of the objects in  
3 the given cluster.

1        31. The method of claim 29, further comprising storing objects in the  
2 given cluster in a tree structure organized by cluster and labeled in accordance  
3 with the assigned names.

1        32. A system of organizing a collection of objects, comprising:  
2            a segmentation engine operable to segment objects from the collection into  
3 clusters; and

4            a naming engine operable to extract context-related meta data associated  
5 with the objects and parsable into multiple levels of a name hierarchy, and assign  
6 names to each cluster based on the extracted context-related meta data  
7 corresponding to a level of the name hierarchy selected to distinguish segmented  
8 clusters from one another.

1        33. A method of organizing a collection of objects, comprising:

2           accessing a sequence of objects segmented into clusters each including  
3   multiple objects arranged in a respective sequence in accordance with context-  
4   related meta data associated with the objects;

5           selecting for each object cluster at least two constituent objects  
6   representative of beginning and ending instances in the corresponding object  
7   sequence; and

8           graphically presenting the selected representative objects of each cluster.

1       34.   The method of claim 33, further comprising graphically presenting a  
2   stack of partially overlapping images representative of multiple objects in a cluster  
3   in response to user input.

1       35.   The method of claim 34, further comprising revealing an increased  
2   portion of a given representative image in the stack in response to detection of a  
3   user-controlled display icon positioned over the given representative image.

1       36.   The method of claim 33, wherein the representative objects of any  
2   given cluster are presented closer to each other than to the representative objects  
3   of other clusters.

1       37.   The method of claim 33, further comprising merging objects of one  
2   cluster into an adjacent cluster in response to user input.

1       38.   The method of claim 37, wherein objects of one cluster are merged  
2   into an adjacent cluster in response to dragging and dropping of the objects to be  
3   merged.

1       39.   The method of claim 37, wherein the objects of the one cluster are  
2   merged into the adjacent cluster in response to user selection of an icon for  
3   merging the clusters.

1       40.   The method of claim 33, further comprising presenting a graphical  
2   representation of distributions of objects in the clusters.

1        41.     The method of claim 40, wherein a object distribution for a given  
2 cluster is presented as object instances plotted along an axis corresponding to a  
3 scaled representation of the context-related extent spanned by the given cluster.

1        42.     The method of claim 40, further comprising splitting a given cluster  
2 in response to user selection of a point in the representation of the object  
3 distribution presented for the given cluster.

1        43.     The method of claim 40, further comprising automatically splitting a  
2 given cluster into two or more clusters in response to user input.

1        44.     The method of claim 43, wherein the given cluster is automatically  
2 split into a user-selected number of sub-clusters.

1        45.     The method of claim 43, wherein the given cluster is automatically  
2 split based on relative sizes of intervals between successive objects in the given  
3 cluster.

1        46.     The method of claim 33, wherein the context-related meta data  
2 corresponds to object generation times.

1        47.     The method of claim 33, wherein the context-related meta data  
2 corresponds to object generation locations.

1        48.     The method of claim 33, wherein the segmented sequence includes  
2 objects of the following types: text, audio, graphics, still images, video, and  
3 business events.

1        49.     The method of claim 33, further comprising graphically presenting  
2 at least one link to an object of a cluster arranged in a sequence in accordance  
3 with time-related meta data in a calendar format.

1        50.     The method of claim 33, further comprising graphically presenting  
2 at least one link to an object of a cluster arranged in a sequence in accordance  
3 with location-related meta data in a map format.

1        51. A system of organizing a collection of objects, comprising a user  
2 interface layout engine operable to:

3            access a sequence of objects from the collection segmented into clusters  
4 each including multiple objects arranged in a respective sequence in accordance  
5 with context-related meta data associated with the objects;

6            select for each object cluster at least two constituent objects representative  
7 of beginning and ending instances in the corresponding object sequence; and

8            graphically present the selected representative objects of each cluster on a  
9 screen with the representative objects of any given cluster presented closer to  
10 each other than to the representative objects of other clusters.